

## **REMARKS**

In the Office Action mailed August 25, 2005, claims 1, 3-12 and 14-27 (of which claims 1, 11, and 20 are independent) were rejected under 35 U.S.C. § 103(a), and claims 28-30 were allowed. In addition, claims 1, 3-12 and 14-30 were objected to as being improper because of the phrase “antennae.” Applicants have amended these claims to recite “antennas” as requested by the Examiner. Further, Applicants have canceled claims 4 and 14, so that claims 1, 3, 5-12 and 15-30 are pending.

After a careful review of the cited references, Applicants request reconsideration of the rejected claims in view of the following remarks.

### **I. Examiner Interview**

Applicants thank the Examiner for taking time to have a telephone interview on October 20, 2005 to discuss the claim rejections. In particular, Applicants and the Examiner discussed the differences between the previous claim language of “probability of transmission” and the idea of efficiency allegedly taught in the cited references asserted by the Examiner.

Applicants next discussed amending the rejected independent claims to include the phrase highlighted by the Examiner within allowable claim 28 (“identifying one of the plurality of antennas to transmit a wireless signal to a receiver based on geographic proximity of the one of the plurality of antennas to the receiver”).

### **II. Response to Rejection of Claims 1, 3-12 and 14-27**

Claims 1, 3-12 and 14-27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Rudrapatna, U.S. Patent Application Publication No. US 2002/0132600 (Rudrapatna) in view of Smith et al., U.S. Patent No. 6,006,075 (Smith). To establish a *prima facie* case of obviousness under § 103, the cited references must teach or suggest all the claim limitations. (MPEP § 2142).

Claim 1 has been amended to incorporate claim 4, so that claim 1 includes “identifying one of the plurality of antennas to transmit the wireless signal to the receiver by selecting the one of the plurality of antennas based on a geographic proximity to the receiver.”

Claim 11 has been amended to incorporate claim 14, so that claim 11 includes “a pathway manager ... configured to identify one of the plurality of antennas to transmit the wireless signal by selecting the one of the plurality of antennas based on a geographic proximity to the receiver.”

Claim 20 has been amended to include language similar to that of claim 25, so that claim 20 includes “selecting one of the plurality of antennas to transmit the wireless signal to the receiver ... based on geographic proximity of the one of the plurality of antennas to the receiver.”

Each of claims 1, 11 and 20 now include language similar to that as within allowable claim 28 (“identifying one of the plurality of antennas to transmit a wireless signal to a receiver based on geographic proximity of the one of the plurality of antennas to the receiver”).

Applicants submit that neither Rudrapatna nor Smith, separately or in combination, teach or suggest “selecting the one of the plurality of antennas based on a geographic proximity to the receiver,” as in claim 1 and similarly in claims 11 and 20.

Rudrapatna discloses circuitry to select and activate antennas in an array so as to operate them in a beam forming mode, a diversity mode or a MIMO mode. (Abstract). The circuitry determines characteristics of signals to be transmitted or received by the antenna array and, based on the determined characteristics, generates control signals which activate certain antennas in the array to cause them to operate in any one of the three modes. (Rudrapatna, ¶0012). Thus, Rudrapatna selects antennas to transmit or receive signals based on a desired transmission mode.

Rudrapatna does not teach or suggest “selecting the one of the plurality of antennas based on a geographic proximity to the receiver,” as in claim 1 and similarly in claims 11 and 20. The Examiner asserted that Rudrapatna in view of Smith teaches all the claimed limitations of claims 4 and 14 (which have been incorporated into claims 1 and 11) by relying on Smith for teaching “selecting the one of the plurality of antennas based on proximity to the receiver (see for example, column 5, lines 28-40, and Figures 7-8, and detailed information, column 12, lines 9-67 continues to column 13, lines 1-16.” (Office Action, p. 11). Applicants respectfully disagree.

Smith teaches selecting multiple antennas pursuant to a frequency hopping scheme to create transmission space diversity for transmission of a signal. (Smith, Col. 7, lines 42-44). The sections cited by the Examiner in Smith have nothing to do with selecting an antenna based on proximity of the antenna to a desired receiver. Column 5, lines 28-40 just discusses switching between antennas in the assembly quickly and at baseband frequencies.

Further, Figures 7-8, and the detailed description of these figures at column 12, lines 9-67 to column 13, lines 1-16 discuss that a transmitter diversity assembly transmits bursts of signals during selected time slots defined upon selecting ones of a plurality of carriers. Figure 8 illustrates pairing together of antennas with available carriers shown in FIG. 7. When paired together a burst of a communication signal is modulated to be of a frequency to permit its transmission on a selected carrier and the modulated signal is applied to its correspondingly paired antenna. During a first time period, a burst of the communication signal is modulated for transmission upon a first frequency channel from an antenna. Selection of subsequent frequency channels and subsequent antennas to be used during succeeding time periods to transmit bursts of the communication signal are selected by: 1) observing which antennas have been used previously to transmit bursts on carriers within the coherence bandwidth about the selected carrier, and 2) selecting the antenna element for which the time since its latest use is the longest. (Smith, Col. 12, line 9 to Col. 13, line 16). Again, this discussion has nothing to do with selecting an antenna based on a proximity of the antenna to a desired receiver.

Contrary to the Examiner's assertions, the combination of Rudrapatna and Smith does not teach or suggest "identifying one of the plurality of antennas to transmit the wireless signal to the receiver by selecting the one of the plurality of antennas based on a geographic proximity to the receiver," as in claim 1 and similarly in claims 11 and 20. The Examiner has not pointed to any objective teaching within either Rudrapatna or Smith that discusses this claim limitation.

Since neither Rudrapatna nor Smith, separately or in combination, teach or suggest all claim limitations of claims 1, 11 and 20, the combination of Rudrapatna and Smith does not render the invention recited in claims 1, 3, 5-12 and 15-27 obvious.

### **III. Response to Rejection of Claims 7-8 and 17-18**

In addition, Applicants would like to respond to the specific rejection of dependent claims 7-8 and 17-18. Claim 7 recites "wherein the step of identifying the one of the plurality of antennas further comprises the step of calculating a distance between each one of the plurality of antennas and the receiver thereby establishing a set of distances," and claim 17 includes similar language. Depending upon claims 7 and 17 respectively, claims 8 and 18 recite selecting "one of the plurality of antennas corresponding to the smallest distance among the set of distances." The Examiner asserted for claims 7-8 and 17-18, that Rudrapatna in view of Smith teaches all the

claimed limitations, and in particular that Rudrapatna teaches calculating a distance ... “(see for example, ¶[0031], lines 1-25),” and further that Smith teaches selecting one of the antennas corresponding to the smallest distance “(see, for example, column 7, lines 19-29, the communication formed based on signal strength and established distance, Figures 7-8, and detailed information, column 12, lines 9-67 continues to column 13, lines 1-16).” (Office Action, p. 12). Applicants fully disagree.

Paragraph [0031] in Rudrapatna discusses that a second group of antennas is positioned with respect to a first group such that signals from antennas in the second group are uncorrelated with signals from antennas in the first group. Accordingly, the second group of antennas is located a distance of  $10\lambda$  from the first group. In this manner, the first group can perform beam forming/steering while the second group performs MIMO (or diversity) operations. This section does not teach “calculating a distance between each one of the plurality of antennas and the *receiver* thereby establishing a set of distances,” as in claims 7 and similarly in claim 17. Rather, this section teaches places antennas a certain distance apart from one another.

The sections cited to in Smith, column 7, lines 19-29, discuss that receiver circuitry receives “uplink” signals transmitted to the communication station from the remote communication devices, which include mobile subscriber units. This has nothing to do with selecting “one of the plurality of antennas corresponding to the smallest distance among the set of distances,” as in claims 8 and 18. The Examiner stated that this section describes “communication formed based on signal strength and established distance,” at page 12 of the Office Action. However, clearly, this section does not mention such thoughts, and nevertheless, does not teach or suggest selecting “one of the plurality of antennas corresponding to the smallest distance among the set of distances” as calculated between each one of the plurality of antennas and the receiver. In addition, Figures 7-8, and the detailed description of these figures in Smith is discussed above, and again, has nothing to do with selecting an antenna based on a proximity of the antenna to a desired receiver.

For these additional reasons, Applicants submit that neither Rudrapatna nor Smith, separately or in combination, teach or suggest all claim limitations of claims 7-8 and 17-18, and thus the combination of Rudrapatna and Smith does not render the invention recited in claims 7-8 and 17-18 obvious.


#### IV. Summary

Applicants respectively submit that in view of the remarks above, all of the pending claims are in condition for allowance. Applicants therefore respectfully request such action. The Examiner is invited to call the undersigned at (312) 913-3331 with any questions or comments.

Respectfully submitted,

**McDonnell Boehnen Hulbert & Berghoff LLP**

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By:   
Joseph A. Herndon  
Reg. No. 50,469